(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 13 June 2002 (13.06.2002)

PCT

(10) International Publication Number WO 02/046980 A3

(51) International Patent Classification7:

G06F 17/60

- (21) International Application Number: PCT/DK01/00801
- (22) International Filing Date:

30 November 2001 (30.11.2001)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/251,862

8 December 2000 (08.12.2000) U

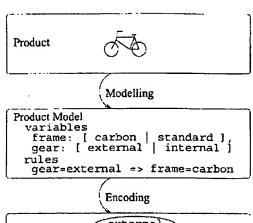
- (71) Applicant (for all designated States except US): CON-FIGIT SOFTWARE APS [DK/DK]; Glentevej 67, DK-2400 Copenhagen NV (DK).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): LICHTENBERG,

Jakob [DK/DK]; Lindegaardsvej 12 A, l. tv., DK-2920 Charlottenlund (DK). ANDERSEN, Henrik, Reif [DK/DK]; Klirevænget 55, DK-2880 Bagsværd (DK). HULGAARD, Henrik [DK/DK]; Koldinggade 20, l. tv., DK-2100 Copenhagen Ø (DK). MØLLER, Jesper [DK/DK]; Frederikssundsvej 14a 4. mf., DK-2400 Copenhagen NV (DK). RASMUSSEN, Anders, Steen [DK/DK]; Nørgaardsvej 18b, 2. th., DK-2800 Lyngby (DK).

- (74) Agent: PLOUGMANN & VINGTOFT A/S; Sankt Annæ Plads 11, P.O. Box 3007, DK-1021 Copenhagen K (DK).
- (81) Designated States (national): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, IGC, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, IIU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU.

[Continued on next page]

(54) Title: A METHOD OF CONFIGURING A PRODUCT USING A DIRECTED ACYCLIC GRAPH



(57) Abstract: A complex product is composed of several parts, where each part may depend on the other. As a consequence of these inter-dependencies, the selection of one part might exclude other parts from being included in the finished product. A consistent configuration is a selection of parts where all inter-dependencies are satisfied. A computer program for computer-assisted configuration helps an end-user to make choices that will lead to a consistent product. The preferred embodiment of the present invention, Virtual Tabulation, is a method for keeping track of inter-depencies a large number of parts, to allow for the construction of an efficient and exact configuration program. Such a program allows interactive configuration over networks (e.g., the Internet). Another aspect of the invention. called Smart Search, allows a set of inter-dependencies among parts to be computed from a product database.

WO 02/046980 A3

rules
gear=external => frame=carbon

Encoding

Virtual
Table

Interactive Configuration

Consistent
Product
Gear=external
Configuration

Configuration

SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- (88) Date of publication of the international search report: 26 September 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERIVATIONAL SEARCH REPORT

international Application No PCT/DK 01/00801

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 GO6F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

8. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 - 606F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

WPI Data, INSPEC, EPO-Internal

Category *	Citation of document, with Indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	SABIN D ET AL: "PRODUCT CONFIGURATION FRAMEWORKS - A SURVEY" IEEE EXPERT, IEEE INC. NEW YORK, US, vol. 13, no. 4, 1 July 1998 (1998-07-01), pages 42-49, XP000791757 ISSN: 0885-9000 the whole document	1-42
Y	WO 00 13113 A (ANDERSSEN H R ET AL) 9 March 2000 (2000-03-09) page 2, line 18 - line 25 abstract the whole document	1-42
	-/	

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents: A document defining the general state of the art which is not considered to be of particular relevance. E earlier document but published on or after the international filing date. C document which may throw doubts on priority dailm(s) or which is cited to establish the publication date of another citation or other special reason (as specified). O document referring to an oral disclosure, use, exhibition or other means. P document published prior to the international filing date but later than the priority date claimed.	To later document published after the international filing date or prionty date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed Invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed Invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "8" document member of the same patent family
Date of the actual completion of the international search 12 June 2002	Date of mailing of the International search report
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Jenny Forss

INTERNATIONAL SEARCH REPORT

International Application No PCT/DK 01/00801

0./5			700001
Category *	ation) DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages		Relevant to daim No.
X	ATTARDI G ET AL: "Web-based configuration assistants." AI EDAM ARTIF. INTELL. ENG. DES. ANAL. MANUF., vol. 12, no. 4, September 1998 (1998-09), pages 321-331, XP002902516 CAMBRIDGE UNIV. PRESS (UK) ISSN: irn-issn 0890-0604. the whole document		1-9,25, 26, 32-37, 39-42
A	CHAN W ET AL: "MODEL CHECKING LARGE SOFTWARE SPECIFICATIONS" IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, IEEE INC. NEW YORK, US, vol. 24, no. 7, 1 July 1998 (1998-07-01), pages 498-519, XP000781149 ISSN: 0098-5589 the whole document		10-42
A .	US 5 825 651 A (GUPTA N ET AL) 20 October 1998 (1998-10-20) column 2, line 50 - line 60 column 5, line 67 -column 6, line 6 abstract; figure 5		1-9,25, 26, 32-37, 39-42
		·	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No PCT/DK 01/00801

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 0013113	A	09-03-2000	AU WO EP	5369999 A 0013113 A1 1105821 A1	21-03-2000 09-03-2000 13-06-2001
US 5825651	A	20-10-1998	AU AU BR EP JP NO WO US	731180 B2 4236897 A 9712795 A 0925543 A1 2000517450 T 990864 A 9810360 A1 6405308 B1	22-03-2001 26-03-1998 14-12-1999 30-06-1999 26-12-2000 15-04-1999 12-03-1998 11-06-2002